UMaine Cooperative Extension: Insect Pests, Ticks and Plant Diseases

Pest Management Fact Sheet #5086

Alternaria Leaf Blight of Cucurbits

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Introduction

Alternaria cucumerina is a fungus of world-wide occurrence which can infect most cucurbits. Direct infection is primarily of the leaves and can lead to defoliation. Defoliation, in turn, leads to a reduction in yield and may cause fruit to ripen prematurely. Fruit may also be damaged due to exposure to the sun and wind. Reported losses have ranged up to 100%. Direct infection of the fruit also occurs (especially melons) but much less frequently.

Environmental Conditions

Infection by A. cucumerina is favored by periods of warm moist weather. Especially important are periods of leaf wetness which allow spores enough time to germinate and penetrate the leaf cuticle. Temperatures of 70-90oF are optimal along with 8 hours continuous leaf wetness. Young plants and old plants are more susceptible than are mid-season plants. Plants which have been weakened by poor nutrition, adverse growing conditions, other diseases, or heavy fruit set are also more susceptible.

Symptoms

Another name for this disease is target leaf spot which refers to the appearance of the lesions on the upper surface of the leaves. Lesions tend to appear first on the older leaves as small circular spots. The spots are light brown with a light center and form concentric dark rings as they enlarge, thus the name target spot. Lesions which form on the lower leaf surface tend to be more diffuse. Fruit infections begin as sunken brown spots and may later develop a dark powdery appearance as the fungus sporulates. The infection may also begin at the blossom end with the entire fruit eventually turning brown and shriveling.

Survival and Dispersal

The fungus survives the winter in infected crop debris as mycelium and may also survive on the seed. The overwintering fungus serves as the source of primary infections and spores from these infections cycle the disease through the growing season. Spores are readily wind-blown and splashed by rain. Periods of wet weather are necessary for abundant spore production.
Control

1. Remove crop refuse at the end of the season.
2. Fall plowing will bury the remaining debris and promote its breakdown.
3. Rotations which exclude cucurbits for 1-2 years may be beneficial.
4. Provide adequate nutrition and appropriate growing conditions to reduce crop stress.
5. Some resistant varieties are available.
6. Fungicide treated disease-free seed may be helpful.
7. The use of fungicides will reduce disease incidence when the applications are appropriately timed. Refer to the table below for some labeled fungicides.

<table>
<thead>
<tr>
<th>Fungicides For Alternaria Control</th>
<th>Application</th>
<th>Some Trade Names</th>
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</thead>
<tbody>
<tr>
<td>azoxyostrobin</td>
<td>7-14 day schedule. See label for resistance guidelines.</td>
<td>Amistar, Quadris</td>
</tr>
<tr>
<td>bosalcid</td>
<td>7-14 day schedule. Maximum of 4 applications</td>
<td>Endura</td>
</tr>
<tr>
<td>chlorothalonil</td>
<td>7-10 day schedule</td>
<td>Fung-onil, Bravo</td>
</tr>
<tr>
<td>copper hydroxide</td>
<td>5-7 day schedule</td>
<td>Kocide</td>
</tr>
<tr>
<td>hydrogen dioxide</td>
<td>Commercial only, see label</td>
<td>Oxidate</td>
</tr>
<tr>
<td>mancozeb</td>
<td>7-10 day schedule</td>
<td>Manzate</td>
</tr>
<tr>
<td>maneb</td>
<td>7-10 day schedule</td>
<td>Maneb</td>
</tr>
<tr>
<td>potassium bicarbonate</td>
<td>5-14 days as needed</td>
<td>Armicarb 100</td>
</tr>
</tbody>
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References


When Using Pesticides

ALWAYS FOLLOW LABEL DIRECTIONS!

Pest Management Office
491 College Avenue, Orono, ME 04473-1295
1.800.287.0279 (in Maine)

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